FUJIFILM

DICOM Conformance Statement

FCR XG1

October, 2000
1st Edition

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Revision History

History	Date	Revision Description
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Contents

1. Introduction 4
2. Implementation Mode 4
2.1 Data Flow Diagram 4
2.2 Functional Definitions of Application Entities 5
2.3 Sequencing of Real World Activities 5
3. AE Specification 6
3.1 FCR XG1 AE Specification 6
3.1.1 Association Establishment Policies 6
3.1.1.1 General 6
3.1.1.2 Number of Associations 6
3.1.1.3 Asynchronous Nature 6
3.1.1.4 Implementation ID information 6
3.1.2 Association Initiation Policy 6
3.1.2.1 Send Image(s) to Remote AE 7
3.1.2.1.1 Associated Real-World Activity 7
3.1.2.1.2 Proposed Presentation Context 7
3.1.2.1.3 SOP Specific Conformance 7
3.1.2.2 Print Image(s) 7
3.1.2.2.1 Associated Real-World Activity 7
3.1.2.2.2 Proposed Presentation Context 8
3.1.2.2.3 SOP Specific Conformance 8
3.1.2.3 Get Worklist 8
3.1.2.3.1 Associated Real-World Activity 8
3.1.2.3.2 Proposed Presentation Context 8
3.1.2.3.3 SOP Specific Conformance 8
3.1.2.4 Inform Procedure State 9
3.1.2.4.1 Associated Real-World Activity 9
3.1.2.4.2 Proposed Presentation Context 9
3.1.2.4.3 SOP Specific Conformance 9
3.1.2.5 Storage Commitment 9
3.1.2.5.1 Associated Real-World Activity 9
3.1.2.5.2 Proposed Presentation Context 9
3.1.2.5.3 SOP Specific Conformance 9
3.1.2.6 Verification 10
3.1.2.6.1 Associated Real-World Activity 10

3.1.2.6.2 Proposed Presentation Context 10
3.1.2.6.3 SOP Specific Conformance 10
3.1.3 Association Acceptance Policy 10
3.1.3.1 Verification Request from Remote AE 11
3.1.3.1.1 Associated Real-World Activity 11
3.1.3.1.2 Presentation Context 11
3.1.3.1.3 SOP Specific Conformance 11
4. Communication Profiles 12
4.1 Supported Communication Stacks 12
4.2 TCP/IP Stack 12
4.3 Physical Media Support 12
5. Standard Extended / Specialized / Privatization 12
6. Configuration 12
7. Support of Extended Character Sets 12
8. CR IOD Overview 13
8.1 CR Image IOD Module Table 13
8.2 Information Module Definitions 13
8.2.1 Patient IE Module 13
8.2.1.1 Patient Module 13
8.2.2 Study IE Module 14
8.2.2.1 General Study Module 14
8.2.3 Series IE Module 14
8.2.3.1 General Series Module 14
8.2.4 Equipment IE Module 15
8.2.4.1 General Equipment Module 15
8.2.5 Common Image IE Module 15
8.2.5.1 General Image Module 15
8.2.5.2 Image Pixel Module 17
8.2.5.3 Contrast Medium/Bolus Module 18
8.2.6 Computed Radiography Image 18
8.2.6.1 CR Series Module 18
8.2.6.2 CR Image Module 18
8.2.7 General Module 19
8.2.7.1 SOP Common Module 19
9. Modality Worklist Query/Retrieve Attribute Overview 20
9.1 Matching Key Attributes 20

9.2 Return Key Attributes 21
10. Modality Performed Procedure Step IOD Attribute Overview 22
11. Storage Commitment Attribute Overview 23
12. DIMSE-Service and Attributes in the Basic Grayscale Print Management 24
12.1 DIMSE-Service 24
12.2 Basic Film Session SOP Class 24
12.3 Basic Film Box SOP Class 24
12.4 Basic Grayscale Image Box SOP Class 24
12.5 Printer SOP Class 25

1. Introduction

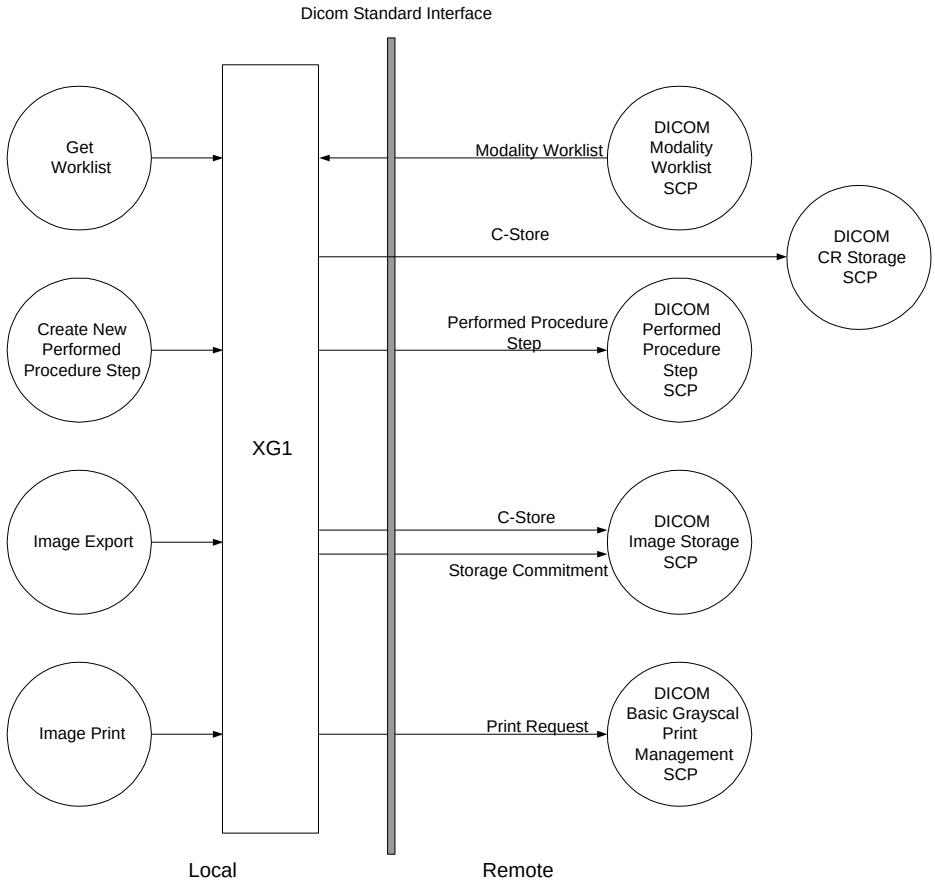
This document provides the DICOM conformance statement for the FCR XG1.

2. Implementation Mode

Connected to the Fuji Computed Radiography, the FCR XG1 constitutes an X-RAY imaging generating modality and contains the following service classes.

- Modality Worklist Management
- Modality Performed Procedure Step
- CR Storage and Storage Commitment
- Basic Grayscale Print Management

2.1 Data Flow Diagram



2.2 Functional Definitions of Application Entities

- The FCR XG1 has a DICOM interface with the HIS/RIS, archives, and printers.
- The FCR XG1 retrieves the actual worklist from the HIS/RIS.
- The FCR XG1 informs the HIS/RIS that a particular procedure step has started/completed.
- The FCR XG1 transmits acquired image data to the Archive.
- The FCR XG1 prints acquired image data with the Printer.

2.3 Sequencing of Real World Activities

Not applicable to Real World Activities.

3. AE Specification

3.1 FCR XG1 AE Specification

The FCR XG1 Application Entity provides Standard Conformance to the following DICOM SOP classes.

SOP Class Name	SOP Class UID	Role
Verification SOP Class	1.2.840.10008.1.1	SCU / SCP
Modality Worklist Information Model – FIND SOP Class	1.2.840.10008.5.1.4.31	SCU
Modality Performed Procedure Step SOP Class	1.2.840.10008.3.1.2.3.3	SCU
Computed Radiography Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.1	SCU
Storage Commitment Push model SOP Class	1.2.840.10008.1.20.2.1	SCU
Basic Grayscale Print Management Meta SOP Class	1.2.840.10008.5.1.1.9	SCU

3.1.1 Association Establishment Policies

3.1.1.1 General

- N-CREATE and N-SET of Modality Performed Procedure Step will be issued through different associations established as time elapses.
- N-EVENT-REPORT of Storage Commitment can be received either through the association that has issued N-ACTION or any other associations. The FCR XG1 accepts a request for establishing an association so that it is available for the latter case and functions as the SCU in SCP/SCU ROLE SELECTION NEGOTIATION.
- The maximum PDU size is 32K Bytes.

3.1.1.2 Number of Associations

The FCR XG1 will establish the following associations at a time.

- Three associations as C-STORE SCU.
- One association as MWM and MPPS SCU.
- One association as Basic Grayscale Print Management Meta SOP Class SCU.

3.1.1.3 Asynchronous Nature

Does not support negotiation of multiple outstanding transactions.

3.1.1.4 Implementation ID information

Implementation Class UID is 1.2.392.200036.9125.5342.1

3.1.2 Association Initiation Policy

The FCR XG1 initiates associations as a result of the following local Real-World activities.

a) Transmission of acquired images to the remote host.

b) Confirmation that images thus sent to the remote host have been stored successfully.

c) Printing of acquired images.
d) Request for a remote Worklist.
e) Notice informing that a particular procedure step has been started or completed.

3.1.2.1 Send Image(s) to Remote AE

3.1.2.1.1 Associated Real-World Activity

The FCR XG1 will acquire images and send those images automatically to the pre-set remote host or select images from the list of images thus stored and send them to the specified destination.

3.1.2.1.2 Proposed Presentation Context

Presentation Context

Abstract Syntax		Transfer Syntax	Role	Extended Negotiation
Name	UID			
CR Image Storage	1.2.840.10008.5.1.4.1.1.1	See next table.	SCU	None
Private CR Image Storage	1.2.392.200036.9125.1.1.2		SCU	None

Transfer Syntax

Name	UID
Implicit VR Little Endian	1.2.840.10008.1.2
Explicit VR Little Endian	1.2.840.10008.1.2.1
JPEG Lossless Hierarchical First-Order Prediction	1.2.840.10008.1.2.4.70

3.1.2.1.3 SOP Specific Conformance

This implementation tries to send all images that belong to a single study over a single association. If some of the images could not be sent successfully, this implementation will terminate the association and try to resend all images over another association.

3.1.2.2 Print Image(s)

3.1.2.2.1 Associated Real-World Activity

The FCR XG1 acquires images and prints those images automatically with a pre-set printer or selects images from the list of images thus stored and prints them by specifying the destination.

3.1.2.2.2 Proposed Presentation Context

Presentation Context

Abstract Syntax		Transfer Syntax	Role	Extended Negotiation
Name	UID			
Basic Grayscale Print Management Meta SOP Class	1.2.840.10008.5.1.1.9	See next table.	SCU	None
Printer SOP Class	1.2.840.10008.5.1.1.16		SCU	None

Transfer Syntax

Name	UID
Implicit VR Little Endian	1.2.840.10008.1.2

3.1.2.2.3 SOP Specific Conformance

The FCR XG1 uses the Basic Grayscale Print Management Meta SOP Class for image printing. Absolutely asynchronously with this, the FCR XG1 will use only the Printer SOP Class periodically for monitoring status of the printer.

3.1.2.3 Get Worklist

3.1.2.3.1 Associated Real-World Activity

The FCR XG1 acquires a worklist stored in the HIS/RIS. The FCR XG1 also acquires it as instructed manually.

3.1.2.3.2 Proposed Presentation Context

Presentation Context

Abstract Syntax		Transfer Syntax	Role	Extended Negotiation
Name	UID			
Modality Worklist Information Model – FIND	1.2.840.10008.5.1.4.31	See next table.	SCU	None

Transfer Syntax

Name	UID
Implicit VR Little Endian	1.2.840.10008.1.2
Explicit VR Little Endian	1.2.840.10008.1.2.1

3.1.2.3.3 SOP Specific Conformance

The FCR XG1 can use both Procedure Step and Patient Information or only Patient Information.

3.1.2.4 Inform Procedure State

3.1.2.4.1 Associated Real-World Activity

When a procedure is started, the FCR XG1 informs the HIS/RIS of it. Also when it is completed (at time of completion of image acquisition), the FCR XG1 informs of it to the HIS/RIS.

3.1.2.4.2 Proposed Presentation Context

Presentation Context

Abstract Syntax		Transfer Syntax	Role	Extended Negotiation
Name	UID			
Modality Performed Procedure Step SOP Class	1.2.840.10008.3.1.2.3.3	See next table.	SCU	None

Transfer Syntax

Name	UID
Implicit VR Little Endian	1.2.840.10008.1.2
Explicit VR Little Endian	1.2.840.10008.1.2.1

3.1.2.4.3 SOP Specific Conformance

None.

3.1.2.5 Storage Commitment

3.1.2.5.1 Associated Real-World Activity

When all images that belong to the same study group have been completely acquired, the FCR XG1 sends those images to the pre-specified archive. Once all the images are transferred, the commitment request will be sent to the archive on a separate association.

3.1.2.5.2 Proposed Presentation Context

Presentation Context

Abstract Syntax		Transfer Syntax	Role	Extended Negotiation
Name	UID			
Storage Commitment Push Model SOP Class	1.2.840.10008.1.20.1	See next table.	SCU	None

Transfer Syntax

Name	UID
Implicit VR Little Endian	1.2.840.10008.1.2

3.1.2.5.3 SOP Specific Conformance

When all images that belong to a study have been completely acquired, those images will be marked

"Undeletable." The FCR XG1 will then send them to the pre-specified image archive. Once all of the images are transferred, the commitment request will be sent to the archive on a separate association. The FCR XG1 waits for the response from the archive on the same association for a configurable amount of time. If it does not receive the response during this time, it will close the association. The FCR XG1 can, however, accept a response from the archive at any time on another association.

Once the N-EVENT-REPORT response is received, the following actions will be taken depending on the status of response.

Complete success: The images in the study will be marked "Deletable" and deleted automatically as necessary.

Other cases: The images in the study will remain marked "Undeletable." The images will be deleted manually and not will be deleted automatically.

Image retransmission for a storage commitment that was unsuccessful and reissuance of the storage commitment will both be instructed manually.

3.1.2.6 Verification

3.1.2.6.1 Associated Real-World Activity

The C-ECHO message will be issued if the operator selects remote DICOM AE and issues a verification message.

3.1.2.6.2 Proposed Presentation Context

Presentation Context

Abstract Syntax		Transfer Syntax	Role	Extended Negotiation
Name	UID			
Verification	1.2.840.10008.1.1	See next table.	SCU	None

Transfer Syntax

Name	UID
Implicit VR Little Endian	1.2.840.10008.1.2

3.1.2.6.3 SOP Specific Conformance

The FCR XG1 provides standard conformance to the DICOM Verification Service Class.

3.1.3 Association Acceptance Policy

A single association will be accepted at any time to receive Storage Commitment responses.

A single association will be accepted at any time to verify application level communication by using the C-EHO service.

3.1.3.1 Verification Request from Remote AE

3.1.3.1.1 Associated Real-World Activity

The FCR XG1 is indefinitely listening for associations. No operator action is required to respond to a verification message.

3.1.3.1.2 Presentation Context

Presentation Context

Abstract Syntax		Transfer Syntax	Role	Extended Negotiation
Name	UID			
Verification	1.2.840.10008.1.1	See next table.	SCP	None

Transfer Syntax

Name	UID
Implicit VR Little Endian	1.2.840.10008.1.2

3.1.3.1.3 SOP Specific Conformance

The FCR XG1 provides standard conformance to the DICOM Verification Service Class.

4. Communication Profiles

4.1 Supported Communication Stacks

DICOM Upper Layer is supported using TCP/IP.

4.2 TCP/IP Stack

The TCP/IP stack is inherited from the Windows 2000 Operating System.

4.3 Physical Media Support

IEEE 802.3 (10BASE-T) / IEEE 802.3U (100BASE-TX)

5. Standard Extended / Specialized / Privatization

None.

6. Configuration

The FCR XG1 can be configured on the DICOM characteristics specified below.

Local
- IP Address
- Host name
- AE Title
- Port number

Remote
- IP Address
- Host name
- AE Title
- Port number

7. Support of Extended Character Sets

ISO-IR 100 (Latin Alphabet #1)

ISO-IR 13/14 (Japanese Katakana: JIS X 0201)

ISO-IR 87 (Japanese Kanji: JIS X 0208)

8. CR IOD Overview

This section describes the CR IOD that the FCR XG1 handles.

8.1 CR Image IOD Module Table

Following is a list of the modules used for the CR image storage SOP class.

Information Entity	Module	Usage Method	Reference
Patient	Patient	M	8.2.1.1
Study	General study	M	8.2.2.1
	Patient study	U	Not supported
Series	General series	M	8.2.3.1
	CR series	M	8.2.6.1
Equipment	General equipment	M	8.2.4.1
Image	General image	M	8.2.5.1
	Image pixels	M	8.2.5.2
	Contrast medium/Bolus	C	8.2.5.3
	CR image	M	8.2.6.2
	Overlay	U	Not supported
	Curve	U	Not supported
	Modality LUT	U	Not supported
	VOI LUT	U	Not supported
	Common SOP	M	8.2.7.1

8.2 Information Module Definitions

Tags not specifically mentioned in notes are handled in the same way as DICOM definitions.

8.2.1 Patient IE Module

8.2.1.1 Patient Module

Attribute Name	Tag	Type	DICOM Definition	Implementation on FCR XG1
Patient's Name	(0010,0010)	2	Patient's name	Multi-byte base
Patient ID	(0010,0020)	2	Main hospital ID no. or code for patient	
Patient's Birth Date	(0010,0030)	2	Patient's date of birth	
Patient's Sex	(0010,0040)	2	Patient's sex. Enumerated values: M = Male F = Female O = Other	If not set, Length = 0.

8.2.2 Study IE Module

8.2.2.1 General Study Module

Attribute Name	Tag	Type	DICOM Definition	Implementation on FCR XG1
Study Instance UID	(0020,000D)	1	Identifier unique to study	A HIS/RIS-generated / IDT-generated / IR-generated number is set. When not obtained from HIS/RIS, FCR XG1 will generate this information by one of the following methods. 1. Generate by Accession Number. 2. Generate by Accession Number & Study Date. 3. Generate by Study Date & Patient ID & Modality. 4. Generate by Study Date & Patient ID & Requesting Service. 5. Generate UID by each image.
Study Date	(0008,0020)	2	Date study began.	Date compilation of study information began
Study Time	(0008,0030)	2	Time study began.	Time compilation of study information began
Referring Physician's Name	(0008,0090)	2	Physician making referral	Due to the current lack of means of input, Length=0 at the modality. Values received from another company's modalities will be stored.
Study ID	(0020,0010)	2	Study identifier issued by user or equipment	Information is set so that modalities can identify test types.
Accession Number	(0008,0050)	2	HIS/RIS-issued number for identifying order of study.	An HIS/RIS-issued study number is set. When not obtained from HIS/RIS, Length = 0.
Study Description	(0008,1030)	3	Institution-issued description or classification of study (component element) conducted	

8.2.3 Series IE Module

8.2.3.1 General Series Module

Attribute Name	Tag	Type	DICOM Definition	Implementation on FCR XG1
Modality	(0008,0060)	1	Modality	CR
Series Instance UID	(0020,000E)	1	Identifier unique to series	Generate UID by each image.
Series Number	(0020,0011)	1	Series ID number	
Laterality	(0020,0060)	2	Whether right or left of body part is to be examined. Necessary when part to be examined is pair-structured. Enumerated values: R = Right L = Left	Length = 0

Series Date	(0008,0021)	3	Date series began	
Series Time	(0008,0031)	3	Time series began	
Series Description	(0008,103E)	3	Description provided by series user	
Body Part Examined	(0018,0015)	3	Description of test of body part to be examined. Definitions: SKULL, CSPINE, TSPINE, LSPINE, SSPINE, COCCYX, CHEST, CLAVICLE, BREAST, ABDOMEN, PELVIS, HIP, SHOULDER, ELBOW, KNEE, ANKLE, HAND, FOOT, EXTREMITY	Values shown below are used for CR. Body part definitions not existing in the DICOM definitions will be added. HEAD, NECK, CHEST, BREAST, ABDOMEN, PELVIS, UP_EXM, LOW_EXM, TEST

8.2.4 Equipment IE Module

8.2.4.1 General Equipment Module

Attribute Name	Tag	Type	DICOM Definition	Implementation on FCR XG1
Manufacturer	(0008,0070)	2	Name of manufacturer of equipment that generated the digital image.	FUJI PHOTO FILM Co., Ltd.
Institution Name	(0008,0080)	3	Institution at which equipment that generated the digital image was installed.	
Station Name	(0008,1010)	3	User-defined name for identifying the equipment that generated the digital image.	Sets the host name of the equipment that generated the image (Image Reader's host name or the device name).
Institutional Department Name	(0008,1040)	3	Name of department at institution at which equipment that generated the digital image was installed.	
Manufacturer's Model Name	(0008,1090)	3	Manufacturer's model name for equipment that generated the digital image.	Model name given to the equipment by the manufacturer. Sets exposure model character strings.
Software Version(s)	(0018,1020)	3	Manufacturer's name of software version for the equipment that generated the digital image.	Sets the software version for the equipment (Image Reader) that generated the image.

8.2.5 Common Image IE Module

8.2.5.1 General Image Module

Attribute Name	Tag	Type	DICOM Definition	Implementation on FCR XG1
Image Number	(0020,0013)	2	Number that identifies the image	The Image number that generated by CR image reader.
Patient Orientation	(0020,0020)	2C	Direction patient faced for line or row of image. Necessary for series in	Assumes Length = 0. Stores values received

			which image does not require an image module.	from other modalities.
Image Date	(0008,0023)	2C	Date on which image pixel data generation began. Necessary when image is part of a time-related series.	Sets the date of start of image generation.
Image Time	(0008,0033)	2C	Time at which image pixel data generation began. Necessary when image is part of a time-related series.	Sets the time of start of image generation.
Image Type	(0008,0008)	3	Image identification characteHIS/RIStic. For details, see DICOM PS3.3 C7.6.1.1.2.	Handling FCR image (Post-Normalized but Pre-Processed), “ORIGINAL/PRIMARY” is set.
Acquisition Number	(0020,0012)	3	Number that identifies one continuous acquisition of data over a certain period of time that formed the image.	Issues numbers sequentially in units of IPs read at the Image Reader. The same number will be assigned to multiple images generated from one IP.
Acquisition Date	(0008,0022)	3	Date on which acquisition of data that formed the image began.	Sets date of start of IP reading.
Acquisition Time	(0008,0032)	3	Time at which acquisition of data that formed the image began.	Sets time of start of IP reading.
Derivation Description	(0008,2111)	3	Text description of image derivation method.	
Source Image Sequence	(0008,2112)	3	Sequence that identifies the set of image class/instance of the image used for deriving the image. Encoded as a sequence for the item (0008, 1150), (0008, 1155).	
>Referenced SOP Class UID	(0008,1150)	1C	Uniquely identifies the referenced SOP class. Necessary when (0008, 2112) will be transmitted.	
>Referenced SOP Instance UID	(0008,1155)	1C	Uniquely identifies the referenced SOP class. Necessary when (0008, 2112) will be transmitted.	
Lossy Image Compression	(0020.2110)	3	Clarifies whether image has been subjected to irreversible compression. Enumerated values: 00: Not subjected to irreversible compression 01: Subjected to irreversible compression	
Pixel Spacing	(0028,0030)	3	Physical distance, within the patient, between the centers of each pixel. Expressed as a numerical set: space between adjoining rows (delimiter), space between adjoining columns. Unit: mm.	

8.2.5.2 Image Pixel Module

Attribute Name	Tag	Type	DICOM Definition	Implementation on FCR XG1
Samples per Pixel	(0028,0002)	1	Number of sample surfaces an image has.	Fixed at 1.
Photometric Interpretation	(0028,0004)	1	Specifies the intended interpretation of image data. MONOCHROME1 Indicates that pixel data has a single monochrome image surface. Minimum sample value is to be displayed in white following VOI gray scale conversion. MONOCHROME2 Indicates that pixel data has a single monochrome surface. Minimum sample value is to be displayed in black following VOI gray scale conversion. The following definitions also exist: PALETTE COLOR, RGB, HSV, ARCB, CMYK	Fixed at MONOCHROME1.
Rows	(0028,0010)	1	Number of rows in an image	
Columns	(0028,0011)	1	Number of columns in an image	
Bits Allocated	(0028,0100)	1	Number of bits allocated to each pixel sample. Each sample has the same number of bits allocated.	
Bit Stored	(0028,0101)	1	Number of bits to be stored for each pixel sample. Each sample will have the same number of bits stored.	
High Bit	(0028,0102)	1	High bit for each pixel sample. Each sample will have the same number of high bits.	
Pixel Representation	(0028,0103)	1	Data representation for pixel sample. Each sample will have the same pixel representation. Enumerated values: 0000H: Integer with no encoding 0001H: Complement of 2.	0000H.
Pixel Data	(7FE0,0010)	1	Stream of pixel samples that compose the image.	
Pixel Aspect Ratio	(0028,0034)	1C	Image's pixel aspect ratio in real world, specified as a numerical set of the row value (delimiter) and column value. Necessary when the aspect ratio is not 1/1 and the image surface module is not applicable to this image.	

8.2.5.3 Contrast Medium/Bolus Module

This is necessary when a contrast medium or bolus has been used (and is not necessary when they have not). As there is no means for determining whether they have been used, a tag will be attached but no information set.

Attribute Name	Tag	Type	DICOM Definition	Implementation on FCR XG1
Contrast / Bolus Agent	(0018,0010)	2	Contrast medium or bolus agent	Length = 0

8.2.6 Computed Radiography Image

8.2.6.1 CR Series Module

Attribute Name	Tag	Type	DICOM Definition	Implementation on FCR XG1
Body Part Examined	(0018,0015)	2	Text description of body part examined. Definitions follow. SKULL, CSPINE, TSPINE, LSPINE, SSPINE, COCCYX, CHEST, CLAVICLE, BREAST, ABDOMEN, PELVIS, HIP, SHOULDER, ELBOW, KNEE, ANKLE, HAND, FOOT, EXTREMITY	Values shown below are used for CR. Body part definitions not existing in the DICOM definitions will be added. HEAD, NECK, CHEST, BREAST, ABDOMEN, PELVIS, UP_EXM, LOW_EXM, TEST
View Position	(0018,5101)	2	Visual field of X-ray related to patient's position. Definitions follow. AP = Anterior/Posterior PA = Posterior/Anterior LL = Left Lateral RL = Right Lateral RLD = Right Lateral Decubitus LLD = Left Lateral Decubitus RLD = Right Lateral Oblique LLD = Left Lateral Oblique	Length = 0

8.2.6.2 CR Image Module

Attribute Name	Tag	Type	DICOM Definition	Implementation on FCR XG1
KVP	(0018,0060)	3	Peak KVP output of the X-ray-generator used.	
Plate ID	(0018,1004)	3	ID or serial no. of the sensing plate on which the image was collected.	Sets the IP bar code no. Format: "a********c"
Exposure Time	(0018,1150)	3	X-ray exposure time. Unit: msec.	
X-ray Tube Current	(0018,1151)	3	X-ray tube current. Unit: mA.	
Acquisition Device Processing Description	(0018,1400)	3	Processing descriptions particular to image-related equipment. (Ex.: description of	Sets menu name. Exposure menu name.

			internal organ.)	
Acquisition Device Processing Code	(0018,1401)	3	Code indicating processing particular to image-related equipment. (Ex.: CR internal organ filter code.)	Sets menu code. Codifies the body part, exposure method and exposure menu. Taken to be FFFF if no value exists.
Sensitivity	(0018,6000)	3	Reading sensitivity	

8.2.7 General Module

8.2.7.1 SOP Common Module

Attribute Name	Tag	Type	DICOM Definition	Implementation on FCR XG1
SOP Class UID	(0008,0016)	1	Uniquely identifies the SOP class.	CR:1.2.840.10008.5.1.4.1.1.1
SOP Instance UID	(0008,0018)	1	Uniquely identifies the SOP instance.	
Specific Character Set	(0008,0005)	1C	Used to expand the basic figure set or when using a substitute character set. Necessary in expansion or when using a substitute character set. Alphanumerics: No tag European languages: ISO_IR 100 Japanese (backslash is half-size) Half-size kana only:ISO 2022 IR 13 Half-size kana + kanji:ISO 2022 IR 13 \ ISO 2022 IR 87 Kanji only (half-size kana not used): \ ISO 2022 IR 87	

9. Modality Worklist Query/Retrieve Attribute Overview

9.1 Matching Key Attributes

The FCR XG1 supports two types of queries.

- The Patient Based Query

  The FCR XG1 supports all combinations of the matching key attributes listed in the next table.

Matching key attributes	tag	matching key type	Matching type
Patient's Name	0010,0010	R	Single / Wild Card
Patient ID	0010,0020	R	Single
Accession Number	0008,0050	O	Single
Requested Procedure ID	0040,1001	O	Single

- The Broad Query

  The FCR XG1 supports all combinations of the matching key attributes listed in the next table.

Matching key attributes	tag	matching key type	Matching type
Scheduled Procedure Step Start Date	0040,0002	R	Single / Range
Modality	0008,0060	R	Single
Scheduled Station AE-Title	0040,0001	R	Single

9.2 Return Key Attributes

The FCR XG1 requests the Return Key Attributes listed in the next table.

	Description	Tag	Matching key Type	Return Key Type
SOP Common				
	Specific Character Set	(0008,0005)	O	1C
Scheduled Procedure Step				
	Scheduled Procedure Step Sequence	(0040,0100)	R	1
	>Scheduled Staiton AE Title	(0040,0001)	R	1
	>Scheduled Procedure Step Start Data	(0040,0002)	R	1
	>Scheduled Procedure Step Start Time	(0040,0003)	R	1
	>Modality	(0008,0060)	R	1
	>Scheduled Performing Physician's Name	(0040,0006)	R	2
	>Scheduled Procedure Step Description	(0040,0007)	O	1C
	>Scheduled Action Item Code Sequence	(0040,0008)	O	1C
	>>Code Value	(0008,0100)	O	1C
	>>Coding Scheme Version	(00080103)	O	3
	>>Coding Scheme Designator	(0008,0102)	O	1C
	>>Code Meaning	(0008,0104)	O	3
	>Scheduled Procedure Step ID	(0040,0009)	O	1
Requested Procedure				
	Requested Procedure ID	(0040,1001)	O	1
	Requested Procedure Description	(0032,1060)	O	1C
	Requested Procedure Code Sequence	(0032,1064)	O	1C
	>Code Value	(0008,0100)	O	1C
	>Coding Scheme Designator	(0008,0102)	O	1C
	>Coding Scheme Version	(0008,0103)	O	3
	>Code Meaning	(0008,0104)	O	3
	Study Instance UID	(0020,000D)	O	1
	Referenced Study Sequence	(0008,1110)	O	2
	>Referenced SOP Class UID	(0008,1150)	O	1C
	>Referenced SOP Instance UID	(0008,1155)	O	1C
	Names of Intended Recipients of Results	(0040,1010)	O	3
Imaging Service Request				
	Accession Number	(0008,0050)	O	2
	Referring Physician's Name	(0008,0090)	O	2
Visit Identification				
Visit Status				
Visit Relationship				
	Referenced Patient Sequence	(0008,0120)	O	2
	>Referenced SOP Class UID	(0008,1150)	O	2
	>Referenced SOP Instance UID	(0008,1155)	O	2
Visit Admission				
Patient Relationship				
	Patient's Name	(0010,0010)	R	1
	Patient ID	(0010,0020)	R	1
	Other Patient Ids	(0010,1000)	O	3
Patient Demographic				
	Patients Birth Date	(0010,0030)	O	3
	Patient's Sex	(0010,0040)	O	2
	Ethnic Group	(0010,2160)	O	3
	Patient Comments	(0010,4000)	O	3
Patient Medical				
	Additional Patient History	(0010,21B0)	O	3

10. Modality Performed Procedure Step IOD Attribute Overview

The FCR XG1 provides the attributes listed in the next table.

Attribute Name	Tag	N-CREATE	N_SET	Final	from Modality Worklist
Common					
SOP Class UID					
Instance UID					
Specific Character Set	(0008,0005)	1C/1C	Not allowed		0008,0005
Performed Procedure Step Relationship					
Scheduled Step Attribute Sequence	(0040,0270)	1/1	Not allowed		-
>Study Instance UID	(0020,000D)	1/1	Not allowed		0020,000D
>Referenced Study Sequence	(0008,1110)	2/2	Not allowed		0008,1110
>>Referenced SOP Class UID	(0008,1150)	1C/1	Not allowed		0008,1150
>>Referenced SOP Instance UID	(0008,1155)	1C/1	Not allowed		0008,1155
>Accession Number	(0008,0050)	2/2	Not allowed		0008,0050
>Requested Procedure ID	(0040,1001)	2/2	Not allowed		0040,1001
>Requested Procedure Description	(0032,1060)	2/2	Not allowed		0032,1060
>Scheduled Procedure Step ID	(0040,0009)	2/2	Not allowed		0040,0009
>Scheduled Procedure Step Description	(0040,0007)	2/2	Not allowed		0040,0007
>Scheduled Action Item Code Sequence	(0040,0008)	2/2	Not allowed		0040,0008
>>Code Value	(0008,0100)	1C/1	Not allowed		0008,0100
>>Coding Scheme designator	(0008,0102)	1C/1	Not allowed		0008,0102
>>Coding Scheme Version	(0008,0103)	3/3	Not allowed		0008,0103
>>Code Meaning	(0008,0104)	3/3	Not allowed		0008,0104
Patient's Name	(0010,0010)	2/2	Not allowed		0010,0010
Patient ID	(0010,0020)	2/2	Not allowed		0010,0020
Patient's Birth Data	(0010,0030)	2/2	Not allowed		0010,0030
Patient's Sex	(0010,0040)	2/2	Not allowed		0010,0040
Referenced Patient Sequence	(0008,1120)	2/2	Not allowed		0008,0120
>Referenced SOP Class UID	(0008,1150)	1C/1	Not allowed		0008,1150
>Referenced Instance UID	(0008,1155)	1C/1	Not allowed		0008,1155
Performed Procedure Step Information					
Performed Procedure Step ID	(0040,0253)	1/1	Not allowed		
Performed Station AE Title	(0040,0241)	1/1	Not allowed		
Performed Station Name	(0040,0242)	2/2	Not allowed		
Performed Location	(0040,0243)	2/2	Not allowed		
Performed Procedure Step Start Data	(0040,0244)	1/1	Not allowed		
Performed Procedure Step Start Time	(0040,0245)	1/1	Not allowed		
Performed Procedure Step Status	(0040,0252)	1/1	3/1		
Performed Procedure Step End Data	(0040,0250)	2/2	3/1	1	
Performed Procedure Step End Time	(0040,0251)	2/2	3/1	1	
Image Acquisition results					
Modality	(0008,0060)	1/1	Not allowed		0008,0060
Study ID	(0020,0010)	2/2	Not allowed		0040,1001
Performed Action Item Code Sequence	(0040,0260)	2/2	3/2		0040,0008
>Code Value	(0008,0100)	1C/1	1C/1		0008,0100
>Coding Scheme Designator	(0008,0102)	1C/1	1C/1		0008,0102
Performed Series Sequence	(0040,0340)	2/2	3/1	1	
>Protocol Name	(0018,1030)	1C/1	1C/1	1	
>Series Instance UID	(0020,000E)	1C/1	1C/1	1	
>Referenced Image Sequence	(0008,1140)	2C/2	2C/2	1C	
>>Referenced SOP Class UID	(0008,1150)	1C/1	1C/1		
>>Referenced SOP Instance UID	(0008,1155)	1C/1	1C/1		

11. Storage Commitment Attribute Overview

The FCR XG1 sends the attributes listed in the next table.

Attribute	Tag	Note
Transaction UID	0008,1195	
Referenced SOP Sequence	0008,1199	
>Referenced SOP Class UID	0008,1150	References to the CR Image IOD
Referenced SOP Instance UID	0008,1155	
Referenced Study Component Sequence	0008,1111	A reference to the Performed Procedure Step IOD
>Referenced SOP Class UID	0008,1150	
>Referenced SOP Instance UID	0008,1155	

12. DIMSE-Service and Attributes in the Basic Grayscale Print Management

12.1 DIMSE-Service

SOP Class	DIMSE	Usage SCU	Usage
Basic Film Session SOP Class	N-CREATE	M	used
	N-SET	U	not used
	N-DELETE	U	used
	N-ACTION	U	not used
Basic Film Box SOP Class	N-CREATE	M	used
	N-SET	U	not used
	N-DELETE	U	used
	N-ACTION	M	used
Image Box SOP Class	N-SET	M	used
Printer SOP Class	N-EVENT-REPORT	M	used
	N-GET	U	used

12.2 Basic Film Session SOP Class

□ N-CREATE

Name	Tag	Usage	Value
Number of Copies	2000,0010	U	1-9
Medium Type	2000,0030	U	CLEAR FILM BLUE FILM
Film Destination	2000,0040	U	PROCESSOR BIN_i

12.3 Basic Film Box SOP Class

□ N-CREATE

Name	Tag	Usage	Value
Image Display Format	2010,0010	M	STANDARD＼1,1
Film Orientation	2010,0040	U	PORTRAIT LANDSCAPE
Film Size ID	2010,0050	U	11INX14IN 14INX17IN
Smoothing type	2010,008	U	SHARP SMOOTH MEDIUM
Border Density	2010,0100	U	BLACK WHITE 0-300
Trim	2010,0140	U	NO

12.4 Basic Grayscale Image Box SOP Class

□ N-SET

Name	Tag	Usage	Value
Image Position	2020,0010	M	1
Requested Image Size	2020,0030	U	352.0

			360.0
Samples Per Pixel	0028,0002	M	1
Photometric Interpretation	0028,0004	M	MONOCHROME1
Rows	0028,0010	M	4280 2540
Columns	0028,0011	M	3520 3600
Bits Allocated	0028,0100	M	16
Bits Stored	0028,0101	M	12, 10
High bit	0028,0102	M	11, 9
Pixel Representation	0028,0103	M	0
Pixel data	7fe0,0010	M	

12.5 Printer SOP Class

□ N-EVENT-REPORT

Event Type Name	Event Type ID	Attribute	Tag	Usage
Normal	1			
Warning	2	Printer Name	2110,0030	U
		Printer Status Info	2110,0020	U
Failure	3	Printer Name	2110,0030	U
		Printer Info	2110,0020	U

□ N-GET

Name	Tag	Usage
Printer Status	2110,0010	U
Printer Status Info	2110,0020	U